

REMARKS

This is a full and timely response to the outstanding final Office Action mailed April 5, 2006. Upon entry of the amendments in this response, claims 2, 5, 13-16, 18-20 and 35-37 remain pending of which claims 5, 15, 16, 18-20 and 35-37 have been allowed in the outstanding Office Action. Applicants have currently amended claim 2 with no addition of new matter. Reconsideration and allowance of the application and all the remaining pending claims are respectfully requested.

A. Allowable subject matter

Applicants wish to express their sincere gratitude for Examiner's allowance of Claims 5, 15, 16, 18-20 and 35-37.

B. Rejections of claims under 35 U.S.C. §112

Statement of the rejection

The Office Action states: "*Claims 2, 13 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.*"

The Office Action further states: "*Regarding claim 2, the phrase "suitable" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed, thereby rendering the scope of the claim(s) unascertainable. Claims 13 and 14 are rejected by virtue of their dependency.*"

Response to the rejection

Applicants have amended claim 2 to clarify the scope of the claim. Currently amended claim 2 now includes "a substrate comprising material ~~suitable for~~ compatible with a semiconductor manufacturing process."

This aspect has been described in Applicants' original specification under "Summary of the Invention" as: "*X-ray imaging systems and methods of the invention involve the use of pixelated gas detectors. Such pixelated gas detectors can be constructed using conventional semiconductor fabrication techniques. This potentially enables the gas detectors to be formed by readily available and relatively inexpensive batch-processing techniques.*"

Further mention has been made in Applicants' specification under "Detailed description" on page 10, lines 7-12 as: "*The pixelated gas detector 100 of FIG. 4, as well as others described herein, can be formed of various materials. By way of example, the gas*

detector could be formed of material(s) suitable for manufacture by semiconductor fabrication techniques. For instance, substrate 402 can be SiO₂. In such an embodiment, regions 414 arranged between the metal vias as well as portions of layer 406 not attributed to detection circuitry could be formed of substrate material, i.e., SiO₂.”

In rejecting claim 2, the Office Action alleges that “*the phrase “suitable” renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed, thereby rendering the scope of the claim(s) unascertainable.*” Applicants respectfully assert that 35 U.S.C. 112, second paragraph, does not necessitate an exhaustive listing of elements in a claim, as long as one of ordinary skill in the art can recognize the limitations of the claim.

Consequently, the Office Action requirement is improperly restrictive because it suggests limiting the claim to a few specific elements. For example, persons of ordinary skill in the art will recognize that several devices incorporating ceramic and alumina substrates are fabricated using current semiconductor manufacturing processes.

Furthermore, in this regard, it is well known that claims do not have to be drafted in a manner that precludes technological advances. Current semiconductor manufacturing processes are often used as a yardstick for evaluating the suitability, as well as for estimating manufacturing costs, for advanced materials incorporated into devices under development.

Therefore, Applicants respectfully assert that the phrase “a substrate comprising material compatible with a semiconductor manufacturing process” is unambiguously understood by persons of ordinary skill in the art and is consistent with acceptable claim methodology. It is improper of the Office Action to insist that Applicants’ claim 2 should include only elements that have been “actually disclosed.”

Applicants hereby request withdrawal of the rejection, followed by allowance of claim 2 as well as dependent claims 13 and 14.

C. Rejections of claims under 35 U.S.C. §103

Claim 2

Statement of the rejection

The Office Action states: “*Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Spergel et al. (US Patent 3,418,474) in view of Beyne et al. (US Patent 6,362,484).*”

Response to the rejection

Attention is respectfully drawn to MPEP 706.2(j) *Contents of a 35 U.S.C. 103*

Rejection, which states in pertinent part:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added)

Addressing the first of the three criteria, Applicants respectfully assert that the Office Action fails to point out where in the cited references can be found some suggestion or motivation to combine Spergel with Beyne. Furthermore, the Office Action fails to point out a reasonable motivation for one of ordinary skill in the art to combine the cited references. In this regard, the Office Action states: *"It would have been obvious to one of ordinary skill in the art at the time invention was made to substitute plastic substrate (24) with the semiconductor substrate on which the gas detector is formed as suggested by Beyne in the system of Spergel, since such a modification would provide user with the digital x-ray gas detector capabilities providing information to the associated digital processor that converts the signals to image data for enhanced real-time visual interpretation of the x-ray images."*

Applicants respectfully traverse this Office Action statement because impermissible hindsight is being used in drawing the conclusion that the combination of Spergel and Beyne provides certain advantages and therefore such a combination is "obvious." Applicants respectfully assert that there is a distinct difference between making a statement that a particular combination of references provides certain advantages versus a statement providing a motivation or suggestion to carry out the combination.

To explain this assertion, Applicants draw attention to Spergel's assembly which includes a medial plate 20 sandwiched between a forward plate 34 and a plastic plate 24. Presumably, a person of ordinary skill in the art studying the disclosure of Spergel may randomly decide that it would be advantageous to modify Spergel's assembly to convert it into a waterproof assembly, or, may randomly decide that it would be advantageous to coat the exterior of Spergel's assembly with a paint of a certain color or a chemical having a specific

composition. While such modifications may provide certain advantages, it can be appreciated that Spergel does not provide a reason to carry out any of these modifications.

Similarly, Spergel **does not provide a reasonable motivation or suggestion** to the person of ordinary skill in the art to replace plastic plate 24 with Applicants' substrate that contains a material compatible for fabrication using a semiconductor manufacturing process.

Furthermore, the Office Action fails to disclose how Spergel's plastic plate, which is described as having a multiplicity of depressions 26 each of which accommodates a conducting metallic needle 30 projecting through (Spergel col. 2, lines 44-49), can be effectively replaced by one incorporating a substrate as defined in Applicants' claim 2. Applicants respectfully assert that a person of ordinary skill in the art would not have a reasonable expectation of success in replacing a perforated plastic plate with a perforated substrate made of a material, which unlike plastic, is capable of undergoing the rigors of a semiconductor manufacturing process.

Consequently, the Office Action fails to satisfy the second of the three MPEP criteria pertaining to a **reasonable expectation of success**.

Due to at least the above-mentioned reasons, Applicants respectfully assert that the Office Action fails to establish a *prima facie* case of obviousness as is required for a proper rejection of claim 2 under 35 U.S.C. 103(a). Consequently, Applicants request withdrawal of the rejection followed by allowance of claim 2.

Claims 13 and 14

Statement of the rejection

The Office Action states: "*Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spergel et al. (US Patent 3,418,474) and Beyne et al. (US Patent 6,362,484) as applied to claim 2 above, and further in view of McDaniel (US Patent 4,780,897).*"

Response to the rejection

Because independent claim 2 is allowable, claims 13 and 14 that each depend directly on claim 2 are also allowable as a matter of law. *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988).

Consequently, Applicant respectfully requests allowance of claims 13 and 14.

Prior Art Made of Record

The prior art made of record has been considered, but is not believed to affect the patentability of the presently pending claims.

CONCLUSION

In light of the foregoing amendments and for at least the reasons set forth above, Applicant respectfully submits that all rejections have been traversed, rendered moot, and/or accommodated, and all pending claims 2, 5, 13-16, 18-20 and 35-37 are in condition for allowance. Of these pending claims, claims 5, 15, 16, 18-20 and 35-37 have been already allowed in the outstanding Office Action. Applicants courteously request allowance of remaining claims 2, 13, and 14. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned representative at (404) 610-5689.

Respectfully submitted,



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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, postage prepaid, in an envelope addressed to: Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450, on **5 June 2006**



Signature